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EXAMINER

NILAND, PATRICK DENNIS

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

12/28/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com



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1. The amendment of 7/6/09 has been entered. Claims 15-22, 29-33, 35-41, and 43 are pending.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 15-22, 29-33, 35-41, and 43 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the disclosed isocyanate polydispersities, does not reasonably provide enablement for all of the polydispersities encompassed by the instantly claimed range, particularly in view of the definition of "not more than". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

A. The instant claims recite "the isocyanate has a polydispersity index of not more than 1.5" (instant claims 15 and 30) or "the isocyanate has a polydispersity index of not more than 1.3" (instant claims 35 and 43). The enabling specification does not provide enablement for the full scope of the newly recited "the isocyanate has a polydispersity index of not more than 1.5" (instant claims 15 and 30) or "the isocyanate has a polydispersity index of not more than 1.3" (instant claims 35 and 43). Page 23, lines 10-15, argued as supporting this amendment limitation as well as the entire originally filed specification has been considered in this regard.

The enabling specification does not provide teaching of how to make isocyanates having the instantly claimed polydispersities within the full range of the instant claims. Polydispersities in the lower portion of the claimed range are expected to be statistically unlikely to be achieved,

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i.e. approaching impossible under today's technology. The full range of polydispersities claims are not fully enabled by the instant specification therefore.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 15-22, 29-33, 35-41, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 6528573 Probst et al. in combination with the teachings of US Patent Application Publication No. 2001/0021746 A1 Nabavi et al..

Probst et al. discloses aqueous emulsions which may contain phosphorous containing and ethylene oxide containing emulsifier and polyisocyanates falling within the scope of those of the instant claims as adhesives at the abstract; column 1, lines 66-67; column 2, lines 1-67, particularly 1-12 which encompasses the instantly claimed isocyanate composition; column 4, lines 23-40, which encompasses the instantly claimed surfactant (b); column 5, lines 64-67, which when coupled with the particulars of the polyisocyanate of Probst, particularly the viscosity, which is indicative that the polyisocyanates of Probst are of low molecular weight as indicated by the disclosed viscosity and its relation to molecular weight by definition of "viscosity average molecular weight", indicates that the instantly claimed polydispersity and d sub 50 are expected of the polyisocyanates of Probst since the lower particle sizes of Probst are not expected to be able to vary significantly to achieve the lower average sizes due to constraints on such average particle sizes conferred by the polyisocyanate molecule sizes, i.e. the average molecular weights thereof and the polydispersities typically associated with lower molecular

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weights tend to be low; column 6, lines 1-12, which encompasses the instantly claimed viscosity and isocyanate content based on the relationship of viscosity and molecular weight and the relationship of molecular weight to isocyanate content, lines 13-67; column 7, lines 1-67, particularly 1-3; column 8, lines 1-12 and 19-37, particularly lines 33-37 which is the instantly claimed joining of at least two surfaces with the applied emulsion; and the remainder of the document. Column 6, lines 26-67, e.g. lines 54-55 of Probst falls within the scope of the instant claim 37.

Probst does not disclose the instantly claimed surfactant.

It would have been obvious to one of ordinary skill in the art at the time of the instantly claimed invention to use the instantly claimed surfactant as that of Probst because Probst encompasses the instantly claimed surfactants, as discussed above, and the benefits thereof as described in Nabavi would have been expected in the adhesive method of Probst.

Nabavi discloses the instantly claimed compositions at the abstract, which encompasses all free NCO groups, sections [0051]-[0059] which encompasses the instantly claimed surfactant, sections [0108]-[0124] of which [0110] encompasses the instantly claimed viscosities and the identities of the specific isocyanates have the instantly claimed NCO contents, e.g. the exemplified isocyanates have the instantly claimed NCO contents though does not use it for the instantly claimed adhesive method. The reference disclosure at section [0110] regarding lowering viscosity and reducing solvent content by using trimers or dimers discussed therein and the viscosity requirements of this section coupled with the ordinary skilled artisan's understanding of how viscosity is affected by molecular weight by definition of "viscosity average molecular weight" is such that the ordinary skilled artisan would have envisioned the

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instant claims 16-17 and 20-22 from the reference's disclosure at section [0110]. It is not seen that the compositions of the reference contain any excess acid nor base and are therefore expected to have pHs in the broad range of the instant claim 26, particularly if they are used as coatings, which cannot degrade the substrates they are applied to. The polyols of section [0011] fall within the scope of the instant claim 24. The coatings adhere to substrates which meets the requirement of the instant claims such that the benefits of using the instantly claimed surfactants that are described by Nabavi would have been desired in Probst, including the inference of Nabavi, section [0014] that the instantly claimed surfactants do not cause poor adhesion. In other words, Nabavi and Probst are analogous art because they both are concerned with adhering aqueous compositions of polyisocyanates to a substrate. Such adhesion applies to coatings and adhesives as has been experienced by anyone who has allowed a paintbrush to dry while in contact with another surface. The instantly claimed particle sizes are disclosed at section [0072]. The instantly claimed pH is disclosed at section [0157]. The instantly claimed "emulsion" is met at section [0010] and section [0151]. Sections [0072], [0172]-[0173], and [0176]-[0179] appear to encompass the instantly claimed polydispersity index of not more than 1.3. It is therefore not seen that the emulsions disclosed by the reference containing the instantly claimed isocyanates, emulsifiers, water, pH, and made by the processes of the reference, such as sections [00154]-[0157] do not necessarily and inherently possess the instantly claimed parameters related to particle size and polydispersity necessarily and inherently. See MPEP 2112.

It would have been expected that the composition properties and parameters that result from the surfactant of Nabavi would have been expected in the compositions of Probst.

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The caselaw argued by the applicant is noted. The above rejection meets the requirements thereof. The argument that the phosphate surfactant of Probst is used to make the polyols is noted. However, it is not removed from the polyols and will therefore be in the final product of Probst. This argument is therefore not persuasive. The polyols per se may emulsify the isocyanate but the phosphate emulsifier will also emulsify it due to its inherent nature. See MPEP 2112. It is noted that the phosphate emulsifier remains in the aqueous dispersion of polymers a) of column 7, lines 62-67. The instant claims recite “wherein the adhesive emulsion includes particles having a particle size  $d_{50}$  of not more than...” Column 5, lines 64-67 clearly show that the adhesives of Probst in fact include particles of the instantly claimed particle size. Applicant's arguments that the instant claims are directed to the method of use of an adhesive emulsion is met in the citation of Probst, column 8, lines 33-37, which is the instantly claimed adhesive method per se. Nabavi is not cited for this use. It is cited for the specific surfactants generally encompassed by Probst. The applicant's arguments that Nabavi does not disclose the adhesive method per se does not address the above rejection, which is based on the combination of Probst and Nabavi, not Nabavi alone. The examiner addresses the analogousness of Probst and Nabavi above. MPEP 2141 and 2143, particularly the portions relating to the cited “KSR” decision, are noted. More particularly aqueous emulsions of binder will form films even if described as adhesive and adhere substrates even if only described as a coating composition. The applicant is invited to see if that is not true of the emulsions of each of Probst and Nabavi. They must only coat the compositions of Probst onto a substrate and cure/dry them and coat the compositions of Nabavi onto a substrate and attach another substrate thereto and cure/dry the product that results. The examiner therefore maintains that the cited references are analogous art

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to each other. Most importantly, Probst discloses the genus of the emulsifiers generally that are more specifically disclosed by Nabavi. Differences argued by the applicant are not shown to exist between the two patent's compositions. It is not seen that the compositions of Probst cannot also have the argued properties, particularly since they are also coatings as well as adhesives.

The instant claims do not recite any standards of breaking strength and peeling nor are sufficient limitations recited to make these inherent to the full scope of the instant claims. Applicant's arguments relating to Hawley and LeSota are noted but Probst's disclosure that their compositions are both adhesive and coatings negates this and Hawley does not show that Nabavi's compositions are not adhesive, which they must necessarily be to adhere to a single substrate. One could necessarily adhere two substrates with the compositions of Nabavi, for the reasons stated above. LeSota is not supplied and not available readily to the examiner.

Arguments related to LeSota are therefore not supported. The arguments rebutting Hawley would apply equally to the applicant's characterization of LeSota. The argument that Nabavi fails to disclose or suggest all features of claims 15 and 30 again ignores the above rejection, which does not require anticipation clearly and does not rely on Nabavi to disclose all features of claims 15 and 30 nor require this. The coating must necessarily adhere to the substrate. The instant claims recite no limitations sufficient to inherently establish unexpected results over the cited prior art in a manner commensurate in scope with the cited prior art and the instant claims and the applicant does not probatively demonstrate unexpected results over the cited prior art in a manner commensurate in scope with the cited prior art and the instant claims. The argument about what the instantly claimed emulsifier does to coating adhesion is not supported with probative evidence that is commensurate in scope with the instant claims and the cited prior art.



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Probst discloses the use of its genus and Nabavi discloses the instantly claimed emulsifier with both Probst and Nabavi disclosing compositions which must adhere to substrates. The instantly claimed emulsifier clearly does not inhibit attachment in Nabavi.

The applicant's arguments have been fully considered but are not persuasive for the reasons stated above and for the full teachings of the cited prior art. This rejection is therefore maintained.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick D. Niland whose telephone number is 571-272-1121. The examiner can normally be reached on Monday to Friday from 10 to 5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Patrick D Niland/  
Primary Examiner  
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